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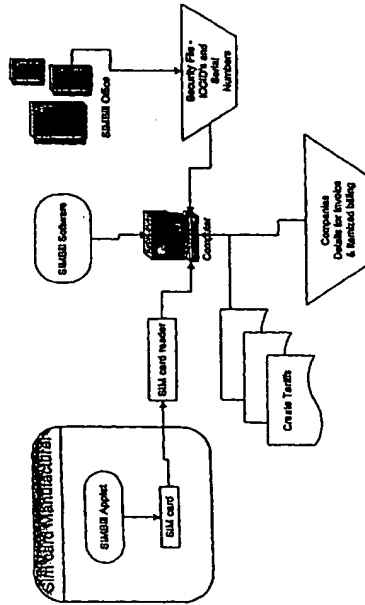
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(54) Title: METHODS AND APPARATUS FOR MONITORING AND RETRIEVING INFORMATION AND TIME USAGE



(57) Abstract: A method of billing usage of hired telephones and apparatus therefor. A hirer is supplied with a plurality of telephones and SIM cards, SIM card reader/writer, host processor and software for the reading, writing and programming of SIM cards. A user hiring a telephone is supplied a telephone with a programmed SIM card. The SIM card records billing information for calls made using the telephone which are later charged to the user. The SIM card may alternatively store a credit amount from which call charges are deducted. On the SIM card the hirer may create and alter credit limits, store customer information, set tariffs for calls and information used to block disallowed calls.

## METHODS AND APPARATUS FOR MONITORING AND RETRIEVING INFORMATION AND TIME USAGE

## TECHNICAL FIELD

The present invention relates to methods and apparatus for monitoring and retrieving information on airline usage and has particular relevance to monitoring and retrieving information using a SIM (subscriber identify module) card in conjunction with a GSM (global system for mobile communications) handset.

The following acronyms and the common meanings of same are  
10 incorporated in the description of the present invention;

## GSM Global System for Mobile Communications

## SIM Subscriber Identifv Module

**ME Mobile Equipment**

OTA Over The Air

## SMS Short Message Service

## API Application Program Interface

## MMI Man-Machine Interface

## OS Operating System

MO Mobile Originated

**MT Mobile Terminated**

NC Network Code

CC Country Code

## BACKGROUND ART

25 A large number of countries of the world have sanctioned and facilitate the use of GSM telephones based on the use of SIM card technology.

Whilst there is no problem in general monitoring the usage of portable telephones the present monitoring and billing systems are not suitable for casual users by way of subscription. Monitoring and billing functions are generally operated by a centralised computer operated by the provider.

**Telephone service providers are on tight margins and in order to**

avoid the possibility of bad debts, and discontinuity of service at the inconvenience to the customer, there is a need for an instant billing or "recharge" system for casual line usage.

If for example a portable telephone was rented by a hotel rental car company or the like, when the telephone is returned it is desirable that all payments in relation to usage are settled at the time of the return.

The line provider's computer database for billing enquiries would not be directly accessible by the persons renting the telephone and settlement of an account is likely to be delayed or on a credit basis for that reason.

There have been a number of systems proposed for controlling cellular telephone usage some with accounting systems relating to usage.

United States Patent no. 5,761,624 entitled "Method and Apparatus for controlling and recording cellular phone transactions using an integrated circuit card" describes a cellular phone call management system using a microprocessor-controlled remote card reader interface for a cellular telephone system to record calls onto a card as they are placed or received.

A microprocessor reads information from a card placed in the remote card reader and ensures the card is valid.

The cellular telephone's transceiver logic bus is monitored to determine the transaction information of a call as it is placed or received.

After the call is completed, the call transaction information is recorded on the card. When all calls are complete, the card is placed in a host card reader attached to a host computer where the call transaction information is read from the card, processed, and written to a host storage device.

The call transactions may then be analyzed and reports may be generated and printed by host computer software.

This methodology uses a so-called smart card, technologies allow for only minimal data storage does not re-tariff, requires specialised equipment, and is designed for use at fixed locations. The system does not re-tariff calls or set call limits.

United States Patent no 5,631,947 entitled "Mobile telephone device for storing a plurality of changeable charge rates and time of limit data"

describes a system where a mobile telephone is adapted for use as a rental phone.

It has an on-board computer which computes and stores telephone usage of the telephone.

Time and charge limits can be set for the telephone.

For example, the telephone can be set to disable itself for all or a selected category of incoming and outgoing calls after the passage of a predetermined time, and/or when the total usage charges reach set and adjusted remotely.

The telephone is for use in rental vehicles. The telephone is adapted to deliver its stored information when called and interrogated by use of a computer at a station when the rental vehicle is returned.

The telephone can be checked-out and enabled, and the time and charge limits adjusted, all form the same remote station.

The telephone is also particularly valuable in other types of rentals, such as in hotel or motel where the mobile telephone is housed in a portable briefcase or carrying case. The time and charge limits are enforced automatically, and can be changed remotely, as with other versions of the telephone device.

Features also are provided to block unwanted calls intended for a prior renter of the phone; to give charge credits for "dropped calls"; and for selectively locking the phone to prevent unauthorised use for all but emergency calls, data transmission and similar calls.

This methodology is designed to be incorporated in rental vehicles, charging is based on a set tariff, and requires and again requires a user to purchase additional specialised equipment

International patent application no. W096/24229 entitled "Mobile phone with internal accounting" describes a mobile phone system with a mobile phone having internal accounting capabilities for real time call debiting to account for the billing parameters of a mobile phone unit that is operated in a multi zone communication network with a complex rate structure, the mobile phone unit having an internal processor with accessible internal memory for storing the accounting program and call data for each call, the accounting

program including an updatable rate table and a complex billing algorithm such as long distance calls, international calls, and charges, for roaming per day and/or per minute, where the account status of the mobile is calculated in real time for decrementing a debit account, the mobile debit phone having a signal for alerting the user of account status, the mobile phone system including communication system for activating and programming a new phone unit and upgrading the account status in rate table in the phone unit over the airways.

This methodology again involves specialised equipment and adaptation and provide limited information and access regarding telephone usage.

United States Patent no. 5,915,228 entitled "Prepaid smart card in a GSM based wireless telephone network and method of operating prepaid cards" describes a prepaid smart card to be used in a wireless telephone network, and methods of prepaying for wireless telephone services, as well as systems for operating a wireless telephone network with prepaid smart cards.

The cards, methods and systems permit the use of wireless telephones anonymously, and/or the payment by a user without having a subscription.

The invention requires minimal changes to the existing wireless telephone network, yet provides security against abuse or fraudulent use of the telephone system.

Additionally, promotional material may be provided with the prepayments, and persons may prepay into a subscriber's telephone.

This methodology is based on prepaid smart cards, does not allow for tariffs to the varied, and the cards used are not re-programmable. It also lacks a roaming feature.

It is an objective of the present invention to provide a SIM card based rental system which can be adopted by a user without the need to purchase specialised equipment and which provides a comprehensive and adaptable user accounting package.

It is a further object of the present invention to provide a system

which will send tariffs and other relative information to the EEPROM of the SIM, and inter alia, bill call and SMN usage real-time with a pre-set balance, store call and SMS usage to the EEPROM of the SIM, allow the then user to view call usage in metres via the MMI of the GSM handset, change tariffs or other information stored in the EEPROM of the SIM via the SMS message, generate a MO SMS notification message sent for new rental and low balance warning, contain a built-in memory corruption detection and correction system.

Further objects and advantages of the present invention will become apparent from the ensuing description which is given by way of example only.

#### DISCLOSURE OF INVENTION

According to the present invention there is provided a method of billing the usage of mobile telephones comprising the steps of:

- (a) Entering a user program onto a SIM card,
- (b) Supplying a hirer with the programed SIM card and software

required for rendering accounts and controlling the use of the mobile telephones upon the termination of a hire period.

The software enables the hirer or to set tariffs and credit limits, independently of network suppliers.

The user program and software enables the hirer to add or deduct credit over the air using SMS systems.

The user program provides the hirer with the ability to;

- (a) create and alter credit limits,
- (b) store customer information,
- (c) set tariffs for calls,
- (d) block disallowed calls.

The user program provides the hirer with the ability to allow free calls at its discretion.

According to a further aspect of the present invention there is provided a SIM card resident cellular phone billing system for performing the aforesaid method the system comprising;

- (a) a host processor unit having a P.C. application, and

(b) a SIM card reading apparatus adapted to access and applet associated with the SIM card, characterised in that the host processor at point of issue is programmable using the P.C. application to control the use of a cellular phone and on return of the cellular phone to its point of issue, and re entry of the SIM card to the SIM card reader, to read the SIM card and generate information as to its usage.

The program of the host processor can transfer information on call costs to the SIM card.

10 The program of the host processor can transfer information relating to the telephone user to the SIM card.

The program of the host processor can read information stored on the SIM card relating to calls made, numbers dialled and tariffs associated with the calls.

15 The system can include a cellular phone modem which enables over the air programming and adding or amending credit balances of a SIM card.

According to still further aspect of the present invention therefor there is provided a method of monitoring telephone airtime usage for rental customers comprising means for creating, deleting and editing tariff plans, means to read and write information to the EEPROM of a SIM via the SIM card reader, and means providing a security system for SIM rentals and creating an SMS message user data for changing information in the SIM, display and print call usage.

25 An application / program may be written in Java and embedded into a SIM card that supports version 2 of Sun's JavaCard and supports SIM Toolkit 2+, including event download.

The basic functionality of this application is to bill, restrict, and store call and SMS usage.

30 This application also has a pre-set balance that decrements for each call and SMS message, when the balance is depleted the application restricts the subscriber from making another call or SMS message.

This application uses the event download of the SIM Toolkit from the ME to determine when a call is connected and disconnected.

This application also uses the event download for a MO or MT SMS message.

This application reads and writes all information to the EEPROM of the SIM at the beginning, during, and at the end of a call.

5 This information is broken down into the meter, tariff, and call tables.

The application displays the balance and call information (i.e. number, charge, and tariff) to the MMI of the ME via the SIM Toolkit.

10 The subscriber has the ability to scroll through the calls and SMS messages made and view the relative information.

The rental process consists of a SIM card with the embedded application, the ME, the SIM card reader and the Windows PC application.

15 The SIM card's EEPROM is initialized via the SIM card reader at the time of rental (i.e. balance and tariffs).

The subscriber then proceeds to make calls and SMS messages until the balance is depleted.

20 The MS and the SIM card is then returned by the Window PC application reading the calls and SMS messages made. This completes the rental processes.

A security risk may occur if the SIM card is removed from the MS and inserted into another MS that does not support event download. This problem can be solved if the SIM has the ability to check if the MS supports event download and if it doesn't lock the SIM.

25 Another solution is to lock the SIM and MS at the network level.

There is no risk in roaming because the rental application has the ability to bill or restrict roaming. Therefore the SIM card should allow roaming.

30 The following tables in this section may be stored in EEPROM that are used by the rental application. This information is read and written one record at a time.

#### Table Meter

The meter table contains the balance and other setup information for

the rental application. The size of the table is 11 bytes and there is only 1 record stored in EEPROM.

Bytes	Description	Length
1-2	Initialized	2
3-4	Balance	2
5	Seconds in cycle	1
6	Minimum seconds	1
7	Cyclical call storage	1
8-9	Current call	2
10-11	Last call	2

**Table Tariff**

The tariff table contains the information for calculating the cost for a MT call, MO call, MT SMS message, or MO SMS message. The size of the table is 19 bytes and there are 100 records stored in EEPROM.

Bytes	Description	Length
1	Type	1
2-3	Country code	2
4-5	Network code	2
6	Barred	1
7-8	International code	2
9-17	Pattern	9
18-19	Tariff	2

**Table Call**

The call table contains information of the call or SMS message that occurred. The size of the table is 20 bytes and there are 100 records stored in EEPROM.

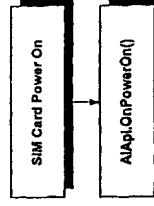
Bytes	Description	Length
1	Type	1
2-3	Country code	2
4-5	Network code	2
6-14	Number dialed	9
15-16	Tariff	2
17-18	Length	2
19-20	Charge	2

# Functional Flow

This section describes the functional flows of the SIM based rental application.

## Power On

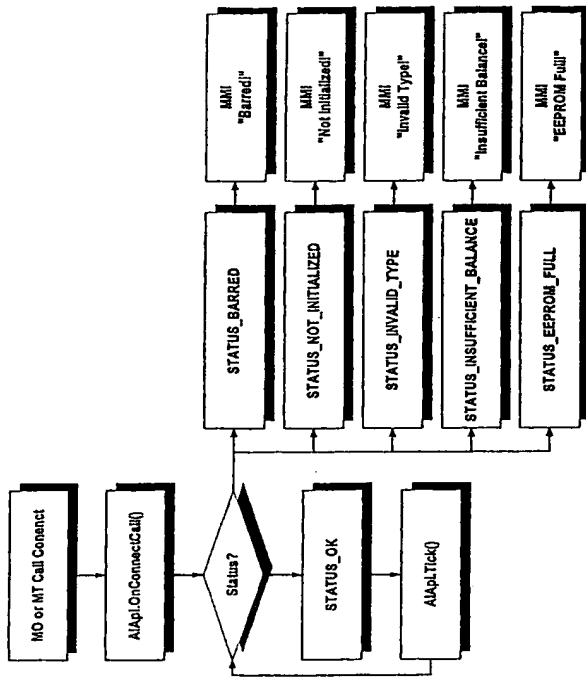
The following diagram describes the functional flow for when the SIM card powers on.



## MO or MT Call Connect

The following diagram describes the functional flow for a MO or MT call connect.

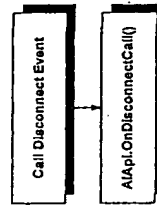
10



5

### Call Disconnect Call

The following diagram describes the functional flow for a call disconnect.

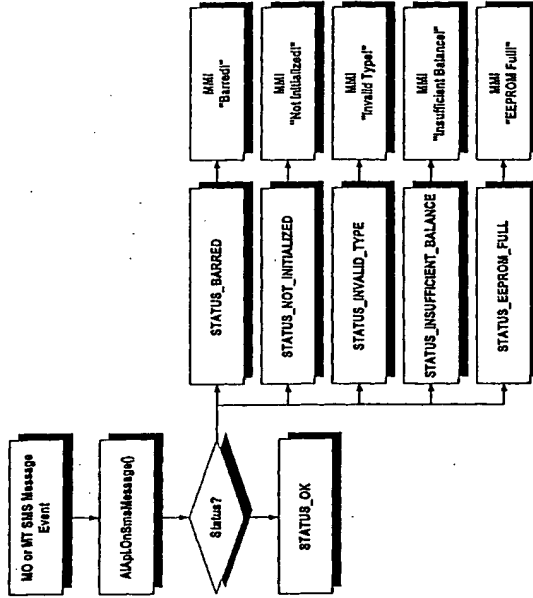


10

11

### MO or MT SMS Message Event

The following diagram describes the functional flow of a MO or MT SMS message event.



5

### MMI

The MMI for the rental application consists of the balance and display the call information. The MMI has the ability to scroll through the calls to display the information.

10

### API

The API methods are found in the class APl. The following methods are used to interface with the application.

15

### Method On Power On

This function is required to be called when the SIM card powers

12

on. This function reads table meter from EEPROM.

### ξ Parameters

None.

### ξ Return Values

None.

#### Method On Connect Call

This function is required to be called when the SIM card receives a connect event message. This function calculates the tariff of the call, determines if the call is barred, and saves data to EEPROM.

### 10 ξ Parameters

**bType** Type of call (i.e. TYPE\_MT\_CALL or TYPE\_MO\_CALL).  
**sCountryCode** The current country code the MS registers from the network.

**sNetworkCode** The current network code the MS registers from the network.

**bNumber** Number dialled for a MO call.

**sLengthOfCall** Length of the number dialled for a MO call.

### ξ Return Values

Returns STATUS\_OK if the function succeeds and any other value if the function fails.

#### Method Tick

This function is required to be called when during a MO or MT call as frequently as possible. The number of ticks represents the number of seconds that have elapsed from the last time this function was called.

### 25 ξ Parameters

**sNumberOfTicks** Number of seconds that have elapsed from the last time this function was called.

13

### ξ Return Values

Returns STATUS\_OK if the function succeeds and any other value if the function fails.

#### Method On Disconnect Call

This function is required to be called when the SIM card receives the disconnect event message. This function terminates the call.

### ξ Parameters

None.

### ξ Return Values

None.

#### Method On Sms Message

Processes the MT or MO SMS message.

### ξ Parameters

**bType** Type of message (i.e. TYPE\_MT\_SMS or TYPE\_MO\_SMS).

**sCountryCode** The current country code the MS registers from the network.

**sNetworkCode** The current network code the MS registers from the network.

### ξ Return Values

Returns STATUS\_OK if the function succeeds and any other value if the function fails.

#### Method Get Call

Retrieves the requested call record.

### ξ Parameters

**BNavigationType** Navigation type.



## ξ Return Values

Returns STATUS\_OK if the function succeeds and any other value if the function fails.

5

### Method Get Data

Returns the ASCII representation of the data type requested.

## ξ Parameters

bType Type to represent in ASCII.

bBuffer Target buffer the ASCII is written to.

sSizeOfBuffer Size of the target buffer.

10

## ξ Return Values

Returns STATUS\_OK if the function succeeds and any other value if the function fails.

Aspects of the present invention will now be described with reference to the accompanying drawings with reference to the accompanying drawings in wherein:

15

Figure 1: is a schematic drawing of system components for a billing system according to the present invention, and

Figure 2: is a schematic drawing of a rental company operation using the system of figure 1, and

20

Figure 3: is a schematic drawing of the use procedures of a hired telephone, and

Figure 4: is a schematic drawing indicating the means by which a hired telephone is updated with a new credit, and

Figure 5: is a schematic drawing indicating the procedures adopted in closing off a hire period.

25

With respect to figure 1 of the drawing the service provider (SIMBILL) adds an applet to a SIM card and the card is entered into a users card reader. SIMBILL software is then entered into the users computer as will as the companies details. The provider sends on a security file to the users computer and the user is then able to create tariffs.

30

As illustrated by figure 2 having selected a tariff and entered rental customer details the user enters a credit limit and rents a telephone.

As is indicated by figure 3 a number controls and checks can be made on the rental telephone and each call made is subject to the procedures and data morals indicated.

5

As indicated by figure 4 whilst the telephone whilst the telephone is out on hire the user is able to SMS message the telephone and update credits.

Finally as illustrated by figure 5 on return of the telephone individual SIM cards can be placed in a reader and an up-to-the-minute it small bill produced.

10

The provider (SIMBILL) user manual marked ATTACHMENT is annexed hereto for the purpose of further explanation of the present invention.

There are many advantages of this invention both technical and commercial including.

15

1.1 The application is embedded into the SIM card so that it will work with any GSM that supports phase II of the SIMToolkit.

1.2 Since the SIMRent application is embedded into the SIM card the handset is allowed to roam on any GSM network because the application has the ability to capture the location network information and bill real-time. This real-time billing capability, roaming, isn't currently offered in the market place.

20

1.3 The SIMRent application also allows the subscriber to view their current balance and calls/SMS usage on the MMI (Man-Machine-Interface) of the handset. This on demand MMI capability is not currently available.

25

1.4 The rental company has the ability to update and retrieve information from the SIMRent application via the SMS (Short-Message-Service) message (i.e. update balance or retrieve calls).

1.5 The SIMRent application has the capability to bill for national calls, international calls, emergency calls, roaming calls, and SMS messages real-time. The application can also barr any call or SMS message and restrict any usage when the balance is depleted.

30

1.6 The SIMRent application allows for any hotel, rental car agency

16

or network operator to easily and securely rent GSM handsets and provide a  
itemized bill of the usage on demand.

Aspects of the present invention have been described by way of  
example only and it will be appreciated that modifications and additions thereto  
may be made without departing from the scope thereof, as defined in the  
appended claims.

17

ATTACHMENT

SIMBill help

**SIMBill**

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Simbill Simbill

Registering \*1

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Setup

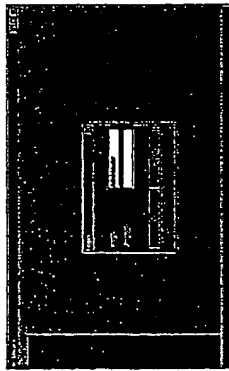
Connect the SIM CARD READER to a COM port on your computer and connect the PS2 plug into the keyboard/mouse or PS2 Connector. That PS2 connector has an adapter to take the keyboard/mouse plug if required. Insert CD and follow instructions.

The setup wizard will guide you through the installation process. You must register SIMBIII before you can use the program.

The following steps will assist you in completing the registration. After you have completed the SIMBIII installation. Double click the SIMBIII icon on your desktop.

A SIMBIII black screen and logon window will appear.

**YOU CANNOT LOG ON AT THIS TIME.** Logging on is only possible once you have registered your software and received a registration file.



Click "Cancel" on the logon window to hide it. FILE, SMS and HELP can be seen on the task bar.

Click on Help then click about.

Registering

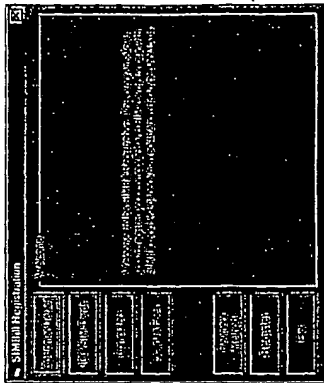
Completing the registration form

This form must be completed prior to operation of any SIMBIII software.

Insert the installation CD.

Click on the SIMBIII Registration Icon

You will see 7 blocks on the left of the window



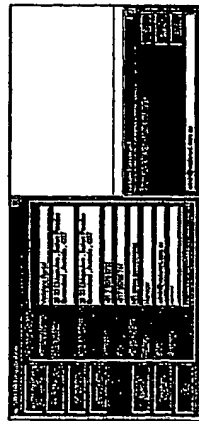
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- Customer Detail
- ICCID/SIM Cards
- Computers
- License Fees
- Payment Method
- Register
- Exit

Click on "Customer Details"

Fill in all the detail fields.

You will be asked to confirm your e-mail address and security password. The security password you enter will be the Administrator password required to login to the program, access administration functions and for any future enquiries and registrations. Please remember this password as it is not changeable.



Click on "Save"

Click on "ICCID/SIM Cards"

Your Service provider should have supplied you with SIMBills enabled sim cards. If the sim cards are not SIMBills enabled they will not operate on this program. Please ensure this with your Service Provider. If you did not receive a list of the sim card numbers (ICCID) the number is usually printed on each sim card in small black type usually 20 numbers character. If the ICCID's are not printed on the sim card you will need to obtain these Sim card numbers from your service provider.

Click on "Add sim"

Enter one ICCID number then "OK"

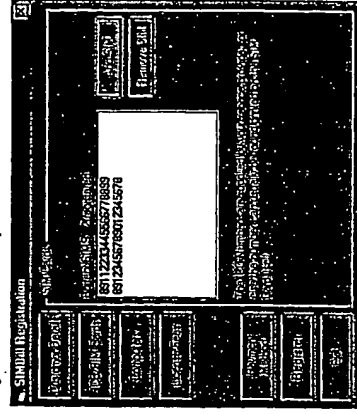
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If you saved a file of your ICCID numbers click Import and select the file this will add all your ICCID's.

Repeat until you have listed all your simcards

A counter on the top of the window will tell you how many you have entered along with a list of the numbers you have entered.

Please add every sim card's ICCID number by clicking the Add SIM The ICCID number should be printed on the sim card or supplied to you by your service provider



Now Click on "Computers"

Click on the first "Add PC" (SIMBills) box.

Add the serial numbers of the SIMBills programs you obtain when you installed the SIMBills Software on each Computer. For each serial number by clicking on the SIMBills icon. Check the icon's help file about. The serial number is displayed on the bottom of the window. Make sure you add all SIMBills serial numbers from each computer.

Click on the second "Add PC" (SIMBills Messenger) box, if applicable

Add the SIMBills Messenger product serial numbers obtained when you installed SIMBills Messenger in this box. Again one serial number for each computer.

You can obtain these serial numbers by clicking on the SIMBills Messenger icon on your desktop. If the program is not registered a registration screen will appear with the serial number displayed.

Click on the third "Add PC" (SIMBills Reports) box, if applicable

Add the SIMBills Reports product serial numbers obtained when you installed SIMBills Reports in this box. Again one serial number for each computer.

You can obtain these serial numbers by clicking on the SIMBills Reports icon on your desktop. If the program is not registered a registration screen will appear with the serial number displayed.

The top box should have all the serial numbers you obtained when you installed SIMBIII on each computer.

The second box should have the SIMBIII Messenger serial numbers for the computers on which you installed SIMBIII Messenger.

The last box should have the SIMBIII Reports serial numbers for the computers on which you installed SIMBIII Reports.

Click on License fees.

This is a text file listing all license fees and charges.

Please note these prices may not be correct at time of registration.

The registration software will automatically calculate all charges at the end of registration.

This is only an information screen no input is required

Then click on "Payment Method" You total cost will be displayed. Complete the method of payment.

If the amount payable is not correct go back to Computers or ICCRUM Cards to correct

Then click on register.

Print - Will print a hard copy for filing or sending by post.  
Save To Disk - Will create a file to e-mail.  
This file should always be e-mailed even if posting.

The information on the registration file will be saved. When you need to again purchase additional software or add Sims run this registration program by clicking on the Registration icon located in Start, Programs, SIMBIII Registration. All your previously stored information will already be on the form allowing you to add the additional Sim cards and/or programs you require. Submit the registration in the same manner as the original registration together with the additional payment.

To E-mail registration file.

Click Save to disk. You will be prompted to select a path into which to save the registration file. This should be e-mailed to [registration@simbiii.com](mailto:registration@simbiii.com)

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## Setting up the program

On receipt of the registration file double click on the registration icon (the one sent to you by e-mail). This will register your program (must be done on all computers).

If you have already registered and are adding additional components you will be sent a new registration file. Double click the file and it will register your additional SIMBILI programs and/or sim cards.

Click on the SIMBILI icon

The login window will appear with the user name "Administrator". Enter the password you sent us with your registration; this will log you on in "Administrator" access level. To re login using "Administrator"

Type "Administrator" (Capital A) followed by your password.

Note: User names and passwords are case sensitive.

You can now setup usernames and passwords see section on setting up new users.

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## License fees

### Information and prices

If you are paying your license fees by credit card or bank transfer it is not required to print. If you are calling a Cheque or draft please print out a copy of the registration form to enclose with your payment.

Upon receipt of this e-mail and cleared funds\* we will e-mail you back a registration file with further instructions.

#### \*Cleared funds

In the case of a credit Card, on us obtaining an authorization from the merchant. Normally immediate. In the case of a bank transfer. Upon receipt by our bank, free of commission and charges. In the case of a Bank Cheque or Cashiers Check. Upon receipt. In the case of a company or personal Cheque 3 business days after receipt for cheques drawn on Australian, New Zealand and South African Banks. In the case of a cheque drawn on a bank of any other Country. When cleared by our bank.

When you receive the registration file this must be run on each computer you sent us the installation serial number for. The same file is used for all computers and will only register the computer serial numbers and sim card numbers provided to us in the registration form. It is possible to add Computers and sim Cards at any time by repeating the registration form and adding the new sim card ICCID's and Computer serial numbers. For security reasons the password selected in any subsequent registration forms must be the same as in the initial Registration.

License Fees

For license fees please consult our web site [www.simbill.com](http://www.simbill.com)  
The registration form will automatically calculate the license fees due, these fees subject to change at time of registration.

SIMBill – Starter Pack Includes

- 1 (One) Sim card reader
- CD Rom Containing SIMBill program, SIMBill Messenger, SIMBill SIMBill Reports
- Handbook
- Licenses for 3 (Three) computers for SIMBill not including SIMBill Messenger licenses, SIMBill Reports licenses or Sim Card licenses.

Additional SIMBill Program Licenses

First 3 (Three) computers included with purchase of starter pack  
Additional computers require a once off license fee

SIMBill Messenger

Each computer requires a license

SIMBill SIMBill Reports

Each computer requires a license

Sim Cards

Each Simcard requires an annual license

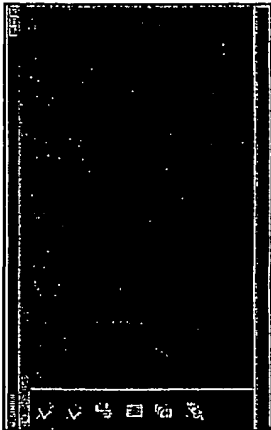
Additional Sim Card Readers

Available on request

Users

Setting up passwords and user rights

Double click on the SIMBill icon on your desktop.  
The login window will appear.  
Enter Administrator as the user name  
Enter your password in the password box (this is the password you sent in on your registration form)  
Click "OK"

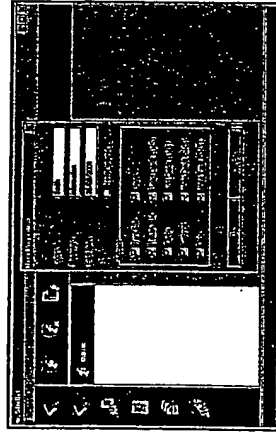


The screen will now have six icons down the left side  
Green picture of film card reader used for "RENT SIM"



- Red picture of sim card reader used for "RETURN SIM"
- Picture of a gear and a typed page used for "SETTINGS"
- Picture of a printed page with pen and? Used for "TARIFFS"
- Picture of multi printed pages used for "LOGS"
- Picture of faces used for "USERS"

FIRST Click on "USERS" the bottom icon of faces.



Three icons will appear on the top of the window

- 1<sup>st</sup> New User
- 2<sup>nd</sup> Delete User
- 3<sup>rd</sup> User Properties

A window will appear showing the Login name Password and Expiry date as well as 10 boxes with specific access rights.

Now click on New User

Enter a user name and password and expiry date or you can select never expires then assign access rights by selecting the box next to the rights you want to assign. You can create another password with full administrator rights by selecting all boxes as well as never expires.

## Descriptions of User Rights

- a) Rent Sim

This is a term used by us to describe the programming of a sim card with a tariff plan and credit limit. While these are the only compulsory fields more customer and sim card information can also be stored. Each Sim must be programmed initially as un-programmed Sims will not work in the phone.

## b) Return Sim

This is a term used by us to read the information off the sim card. This would include credit balance and limited call data record of calls made, as well as any additional information that was stored at time of "rental".

These are the minimum access rights any user should have.

Rent Sim will enable the user to give out sim cards assign tariffs (if permitted in settings, otherwise a default tariff is assigned) Assign a credit limit and capture all additional customer and sim card information.

Return Sim will enable the user to read information off sim cards and print SIMball Reports or a customer invoice, showing all charges and customer information.

## c) Tariffs

This access right is only given to senior staff that are permitted to create new tariff plans or amend existing tariff plans. More information on this can be found under Creating/amending Tariff plans. For more information on how to create and save a tariff plan see "Creating tariff plans"

## d) Settings

This access right should only be given to senior staff that are permitted to change company information, tax rate or default tariff plans. For more information see "Setting default Settings"

## e) Logs

This gives the user access to the log files created on every rental, return and SMS created.  
For more information see "Managing and Exporting log files"

## f) Add Credit (SMS)

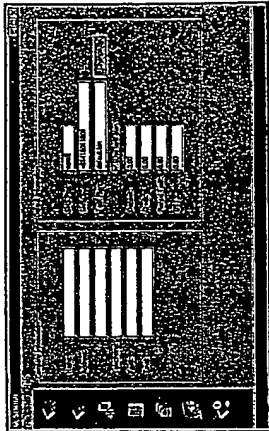
This gives the user access to add credit to a sim card remotely over the air. This can be done with or without SMS Messenger See "Updating sim card by SMS"

- g) Write Credit  
This is the same as Add credit but overwrites instead of appending credit see "Updating sim cards by SMS".
  - b) Write Tariff  
This allows the user to remotely amend the tariff plan on the sim card, over the air. This can be done without "SMS Manager". More info see "Updating sim cards by SMS". This access requires the user also has access rights to "tariff".
- Once you have assigned the user rights and empty click on "ok" then repeat until you have assigned all user rights. This must be done on each computer that the user will have access. Users will only see the icons they have access to. You can change any user rights at any time with an Administrator password, which you must keep secure.

# Default settings

## Entering the default settings

Click on the "settings"



Enter your company or branch name address telephone number and e-mail address. This can be different for each branch if you have external branches or agents. This will be the information that appears on all invoices logs and SIMBill Reports created by that computer.

On the right of the "settings"  
Enter the COM port that the Mobile phone or Cellular modem is connected (if connected if not leave blank)

Enter the SMSC number of the network you are in e.g. Australia +61(150)1501 South Africa +27(2)129 or New Zealand +64(160)600

NB. If you have not activated SIMBILI messenger and connected a Mobile Phone or Cellular modem to send messages you do not have to capture the SMSC or CCID port. If you have activated SMS Messenger and installed a cellular phone or Cellular modem you must capture this information.

If required select a default tariff. If you select use default tariff this tariff will be used when renting out a sim without a choice of tariff plans. If not selected the user will get a list of available tariffs to allocate to that sim, even if the user does not have "tariff" user rights.

The next box is default "Deposit".

If you enter an amount of money in this box it will default to that amount on each rental, but give all users the option to change or remove it. An amount should only be entered in this box if you take a deposit of a usual amount on most rentals. This deposit will be deducted from the invoice total when the invoice is printed. *This deposit is not a credit limit.* A client could have a deposit of \$1000 and a credit limit of only \$100, the other \$900 being security for a handset. In all cases the client will only be able to make calls up to the credit limit.

The next box is the default "Credit Limit"

If you have a regular credit limit you give clients it is advisable to enter an amount into this field. As credit limit is the only mandatory field in the rental, if no amount is entered here you can assign a credit limit at time of rental.

The next box is "Rental Tariff"

Only enter an amount here if you charge a daily rental for Sim cards and handsets. If you enter an amount here or at time of rental a daily charge of this amount including GST or VAT will be charged on the customers invoice but not deducted from their credit limit.

The last box in this section is "GST"

Here you must enter your GST or VAT rate. Expressed in decimal format i.e. 0.10 for 10%.

Reader Information

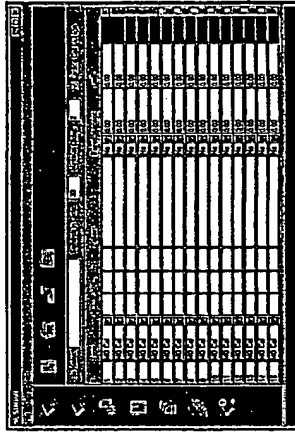
Select the COM port you have connected the sim card reader to. The type library and protocol may depend on which sim card reader you are using. For security reasons SIMBILI will only operate on certain Sim card readers supplied by us. These settings are set correct by default to the reader supplied to you and should only need to be changed if you change to a different reader. For more information on setting for different readers visit our website [www.simbili.com](http://www.simbili.com).

## Tariff plans

### Creating new tariffs

This is the most critical part of your setup, as it is the program that re-tariffs the calls on the sim card used by your client. An error here can cost you money as you could undercharge or overcharge and have a disgruntled client, so pay particular attention to this section and check your tariff program before using it on clients.

Click on "Tariff"



Four icons will appear on the top of the window,  
New tariff plan

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# Open tariff plan

## Save tariff plan

### Sort

Supplied with your program there are three sample tariff plans:

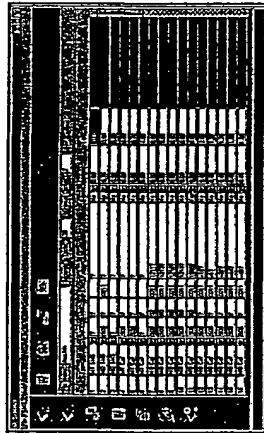
SA.bin - for use in South Africa

AUS.bin - for use in Australia

NZ.bin - for use in New Zealand

Click on "Open Tariff Plan"

The above three options will appear select the file you wish to modify. For the purpose of this tutorial we will explain in detail the AUS.bin file.



You will see the above tariff table

Top line next to file name you will see "Seconds In Qdr" this is the billing cycle you are billing in example 30 second or 60 seconds (these are your only two options) select 30 or 60

Next to that box is "Minimum Qdr" This is the minimum cycles per call charge i.e. you are billing in 10 second cycles with a minimum of one minute per call. In this case enter 2 under minimum cycles. If you have no minimum enter 1.

On the table the tariffs are numbered down the left margin. Next to each number you can enter one tariff.

The first box on the tariff table is "MCC" the next "MNC" A list of MCC's and MNC's are included in this file see "MOBILE COUNTRY, NETWORK and EXIT CODES"

The next box is the call Type; you have a choice of eight call types

"MO Call national", mobile originating call to a number in the same country as your home network

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"MT Call national", mobile terminating call. An incoming call while in the same country as your home network.

"MO Call International" mobile originating call to a country different to that of your home network.

"MT Call International" An incoming call when you are roaming that is logged into a network of a foreign country.

And the same four choices apply for SMS. Text messages sent or received.

The next box is the barred box. You have two choices yes or no. If "no" is selected no calls of this type will be allowed.

The next is the pattern.

Here you will enter the different types of calls you are billing for.

The next box is "access fee" only applicable if you charge a one time setup or connection cost.

The last box is the "tariff". This is the amount that will be charged for that type of call per cycle as set up above 30seconds or 60 seconds. If the call is less than the minimum cycles entered above the minimum number of cycles will be charged.

## Sample Tariff Plan

Let's enter a few tariffs to get the hang of programming tariffs.

For the purpose of this example we will make VODAFONE AUSTRALIA our home network. The MCC (mobile country code) is 271 and the MNC (mobile network code) is 01 (all networks within Australia) the exit code to make an international call out of Australia is 0011.

This information will be dependent of the country you are in. E.g. New Zealand the MCC is 230 and South Africa is 655 the mobile network code can be entered as 1 in all cases but if you want to restrict calls to a specific network in the country you can enter the MNC e.g. Vodafone Australia 03, Vodafone South Africa 01

All this information is available for most GSM networks on this file see

"Mobile country, network and exit codes"

Let's analyze the sample Aus.bin tariff plan and discuss how to amend tariffs.

Line 1 in the diagram above. In the call type MT SMS is selected this is Mobile Terminating SMS we have put question marks the MCC MNC and Pattern and have not entered any access fee or tariff.

This will allow free incoming SMS's anywhere in the world. If you wanted to restrict incoming to only Australia we would replace the question marks with the MCC to 271. Although there is no charge or no restriction in this tariff file we will have to enter it as if the program does not find an applicable tariff this type

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of call will be barred. So even to allow free calls we have to program the call type as free.

Line 3. MO SMS. Here we have notified MO SMS for use while only in Australia at a rate of \$0.16 by ensuring that in a recent time interval of the Tariff file this is a flat rate and no per cycle rate is applicable.

In line 3 we have again programmed MO SMS but instead of \$0.16 in the MCC we have placed a Question mark and changed the tariff to \$0.99 this will charge \$0.99 if the MO SMS is sent while logged into any network anywhere in the world other than Australia.

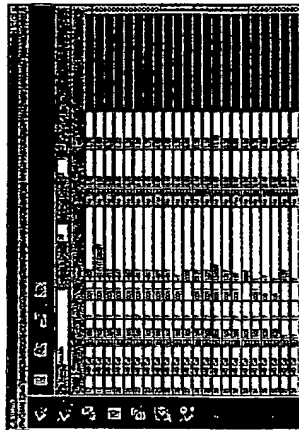
Line 4. MT Call. While in Australia are free but again this has to be programmed in order to allow incoming calls in Australia.

Line 5. MT Call. While in New Zealand the different between these two is we have replaced the MCC with the New Zealand country code 310 instead of 505 and imposed a charge.

Line 6. MT Call. We have again replaced the MCC this time with a Question Mark meaning any Country then those programmed will pay an incoming charge in this case \$4.00 per cycle. You can enter as many specific country codes and rates as you like, But make sure you have a wild card tariff that is a Question Mark in the Country code and this tariff should be high enough to cover the highest incoming roaming call rate.

Line 7-11. This deals with calls to specific numbers that are free if dialled while in Australia.

Line 12-25. This deals with International calls to specific countries as specified rules if called from Australia. Except Line 18



Line 18. This is a free call to a specific number

Line 26. This is calls to any other international number not already specified here we have added an asterisk as well as a tariff the asterisk will be a flag fall charge on connection and the per cycle tariff will be added to this.

Line 27-33. Examples of calls to specific numbers at various tariffs.

Line 34. This is the default of any local call in Australia not already programmed  
Line 35. This is the default of any international call if dialled while roaming in New Zealand.

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Line 36. This is the default cost of any local call within New Zealand while roaming in New Zealand.

Line 37. This is a free Emergency call dialed from any country in the world.  
Line 38. This is the default call rate for any call made while roaming to any country not programmed.

#### Important Notes on tariffs.

You can add as many tariffs as you like as long as you keep within the 50 lines of available tariffs.

It's not important in which order you capture the tariffs, as the program will auto sort.

It is important to have wild card tariffs for every type of call and then program the exceptions to avoid having unperformed calls.

You must always program a default of the six main groups.

- MO SMS
- MT SMS
- MO Call - Local
- MT Call - Local
- MO Call - International
- MT Call - While Roaming

#### Saving a tariff plan

Once you have created all the tariffs you require you can name and save this. To do this, click on the 3<sup>rd</sup> icon from the left on top, picture of a computer and disk. This is the Save Tariff Plan Icon. A window will pop up with a path this is the default path for storing tariffs. You will be asked to enter a name for this Tariff Plan. You can call it any name you choose, Default Tariff, Rental Tariff, Special Tariff for VIP's etc.

If you have more than one computer, doing rental and returns, you must copy this tariff to all these computers. To copy, copy the entire sub directory onto a floppy disk then copy from this disk to the same directory on all the other computers. You must remember that if you make changes to any tariff plan you must copy the changes to all computers.

Once you have named and saved a tariff plan you can go back to Settings to make this a default tariff, if it is the only tariff you use.

# RENTING SIMS

## PROGRAMING THE SIM CARD

A sim card has to be "rented" before it will operate on the Simbilli system. To do this you must first have created a tariff plan and set your default settings.

Place the sim card in the sim card reader and click on the green sim card reader icon (top left) if you have not entered a default tariff plan by checking the "use default tariff square" a list of available tariffs will appear for you to select one. If you have selected to use a default tariff or once you have selected a tariff the following customer information window will appear.

Customer Information

0011223145565778888

0000000000000000

996552060

07/2001

31.00

Credit Card

33.00

400

31/07/2001

The first line box will be automatically read off the sim card.  
The second line requires you to fill in the line (serial number) of the cell phone you are going to use with this sim. This number is printed on the back of the phone under the battery or you can type " \*# 06 # (star, hash, 06 hash) on the key pad of your cell phone and the serial number will be displayed on the screen of the phone. This will LOCK THE SIM CARD TO THIS PHONE. It will not be possible to use this sim on any other phone other than the number you entered here. Please make sure you do not make a mistake and test the sim in the phone when complete.

The match is the mobile phone number attached to this sim card. If you have previously rented out this sim card the number will default to the last number used on this sim.  
Simbilli generates a unique agreement number for each transaction but you can overwrite this to your own agreement or reference number.

The Customer name and address are optional information fields for invoice printing and reports. The credit card info is also optional.

The Deposit field is used only if the customer makes a cash deposit. This amount will credit on the customer's invoice as a payment.

The credit limit is the amount of credit you are allowing for calls only on this rental. Daily charges such as phone rental are not deducted from the credit limit nor are any GST or Vat, so make provision for these charges when assigning a credit limit.

Rental tariff will charge a daily charge of this amount on the invoice excluding any taxes. This is not deducted off the credit limit. And will only be on full days, a phone rented and returned on the same date will not incur a rental charge.

Once you have completed the customer information click OK.

This information will be stored on the sim card. You will see a green line above the progress and the card is written when the words "Sim Ready" will appear on the left of the bottom line. You can now remove the Sim card and place it in the mobile phone and test before supplying to customer.

## RETURNING A SIM

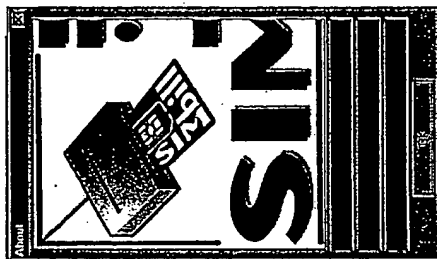
Place the Sim card into the sim card reader and click on the red sim card reader icon. Second from the top on the left. The program will read the sim card and display a detailed invoice on the screen with a pop up message "Do you wish to make a payment or refund now?" You can skip this by clicking "no" and come back to this later by clicking the red return icon again.



If the customer is making a payment on return click yes and enter the amount and payment type then OK. This information is used in the report program for cash and account control. You can change any of the customer's information such as address name telephone number etc. By clicking on the pad and pen icon on the top left.

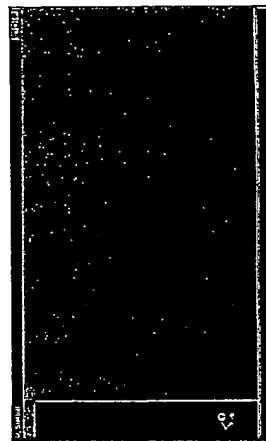
The serial number is displayed on the centerline. Note the number for registration.

This serial number will be different on each computer. Even if installed from the same C.D.



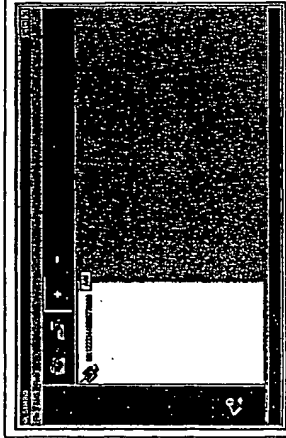
By proceeding with this registration you are deemed to have read, and agreed to, the terms and conditions of the license agreement, and acknowledged SIMBILI's patents and Copyright.

On the bottom of this screen you will see a serial number **WRITE THIS DOWN!!** you are installing SIMBILI on several computers each will have a unique serial number **Write down all the serial numbers as you will need them to register.** Close the about window by clicking on the top right X then click on File and exit.



You now have a screen with only one icon (Standard reader). If you do not have the ICCID numbers of your sim card (required to complete the registration form) you can obtain the ICCID numbers of each Standard in the following way: (You do not have to be logged in or registered to perform this function).

- a. Insert Simcard into card reader and click the icon
- b. Click on the green Add icon. This will automatically read the ICCID of the card and display the ICCID for additional Standard's just place new Simcard into reader and click Plus. A list of all your ICCID's will be displayed
- c. To remove any ICCID's you do not want to be listed select the ICCID and click the Red remove icon
- d. Once you have listed all the ICCID's save them to a file by clicking the save icon next to the Add icon. This file can be attached to your registration form by just typing see attached file in your list of ICCID's on the registration form.



**To obtain the "SIMBill Messenger" product serial number**

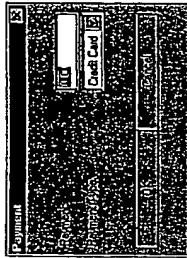
This serial number is the same as your SIMBill serial number. On the main SIMBill program screen Click help, About and the serial number will be displayed.

**To obtain the "SIMBill Reports" product serial number**

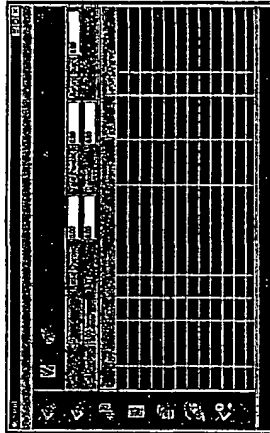
//Installed

Click on the SIMBill Reports icon located in "Start, Programs, SIMBill reports. You will be asked for a registration key (You do not have the Key at this time). Above this is the serial number you will need to obtain the registration key write this down. You need to repeat this process on every computer you wish to operate SIMBill SIMBill Reports on, as the serial number will be different on each computer.

Reboot your computer to initialize the sim reader at any time prior to first use of the reader.



The customer information will appear and allow you to edit certain fields only. Deposit and Credit limit cannot be edited.



To print an invoice click on the print icon, second from left on top. This will print an invoice. You can reprint any time before next rental by returning the sim and clicking on the print icon. After you have done a new rental on that sim this information cannot be retrieved from the sim card. You can retrieve all the information from the rental, return and call and payment data through the reports program every time. At the end of the rental you will be asked to print the reports. You can print the reports on every computer you wish to operate SIMBill SIMBill Reports on, as the serial number will be different on each computer.



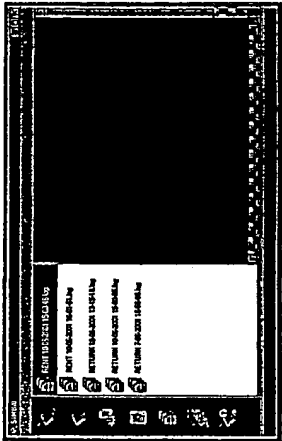
# Logs

## Managing log files

Each time you do a RENTAL or RETURN or update a tin over the air by SMS a log is created of this transaction.

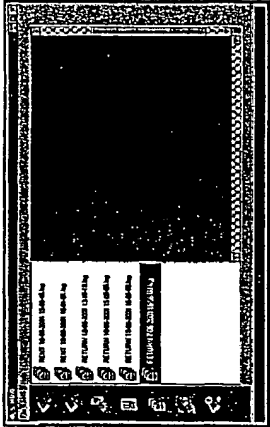
These logs are stored in the Logs directory C:\Program Files\Simbill but can be accessed by selecting the Logs icon on the main screen of SIMBILL. To do this you must have user access to LOGS.

Logs are named by the date and time they were created as well as a prefix of RENTAL, RETURN or SMS to describe the transaction. Below is an example of a RENTAL log.

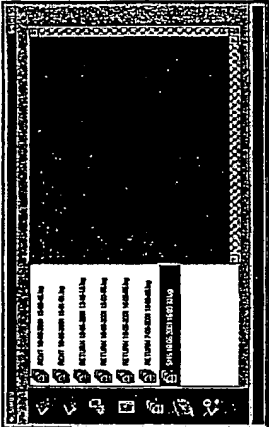


As you can see this gives all the information of that rental including time, date and user as well as a unique reference number or rental agreement number. Similarly a Return log (pictured below) will have all the same information but

include the return date and time, location and user that did the return as well as all the call information including ALL Unmetered Billing. Also included in the return log will be any payment made at time of return and methods of such payment. Each call will be listed separately giving number dialed, duration and cost of each call, as well as a summary and totals.



Below is an example of an SMS log. An SMS log is created each time a credit is added. Written or tariff change over the air.



These logs can be imported to any accounting program, database or spreadsheet from where you can create your own history.

We offer an integrated database and report writer *SIMBILL Reports* that is included on your setup CD. If installed, *SIMBILL Reports* will automatically import all the Log files and give you a host of *SIMBILL Reports* and keep history of all clients and calls. This will give you the ability to produce consolidated invoices, GST or VAT *SIMBILL Reports*, reprint invoices, give a report of cost by sales along with percentage margins, reports on SMS updates, calls received by sales and many more. For more information on *SIMBILL Reports*, see "Regulating *SIMBILL Reports*".

## The Report Menu

To open *SIMBILL Reports* click Start Programs *SIMBILL Reports*



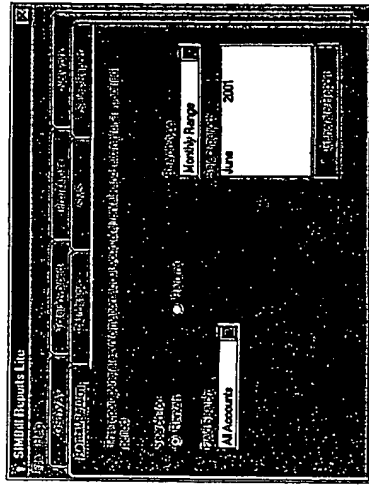
## SIMBILL Repots

# SIMBIII Reports Lite User Manual

## Introduction

SIMBIII Reports Lite is a comprehensive report writer for use with SIMBIII and its associated products. Utilizing your existing SIMBIII data, this program creates useful reports for auditing and bookkeeping purposes, and incorporates advanced transaction searching capabilities to detect any potentially fraudulent usage.

To ensure you have access to the most up to date information, all of your SIMBIII log files are automatically imported when you run the report writer.



There are eight reports that can be generated from your SIMBIII data, all of which can be selected by clicking the appropriate tab in the main screen.

## Data Ranges

While each report has its own individual options and features, all require a time period from which to obtain their results.

When selecting a time period for a report, you have the following two options:

- **Monthly Range** - allows you to select a range of whole months (i.e. July 2000 to June 2001). Only those months found in the SIMBIII data will be displayed for convenience.
- **Specific Range** - allows selection of a specific date range (i.e. 01/06/2000 to 13/07/2001)

These two modes have been included to provide both convenience and flexibility. The Monthly Range allows reports to be generated over whole, monthly ranges. The specific range is designed to allow more detailed, date specific ranges for advanced auditing purposes.

# Report Sorting

Once generated, all reports can be sorted by various fields, including Date, Agent, Location, MSISDN and ICCID, depending on the specific report.

[illegible]

To sort by a specific column, click on the header of that column (i.e. Agent), and the report will automatically re-sort the information.

## Printing

All eight reports can be printed by clicking the Print button, providing hard copies for auditing and bookkeeping purposes.

## Report Exporting

The reports are exportable to a variety of formats for use with other database or billing systems. To export a report, simply click on the Expert Report button and select a format.

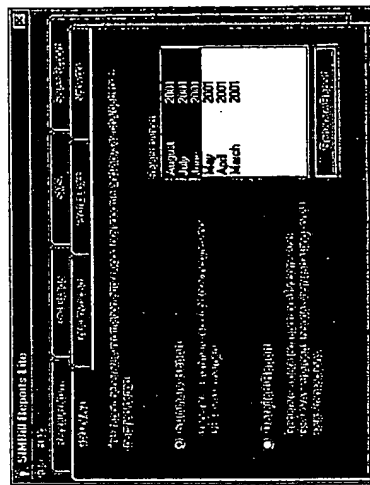
## Reports Available

The following is a listing of all available reports and the features of each:

## GST/VAT Report

Generates a report of total income and any tax charged for a specified period. This report is often necessary to ascertain total tax liabilities for the income generated.

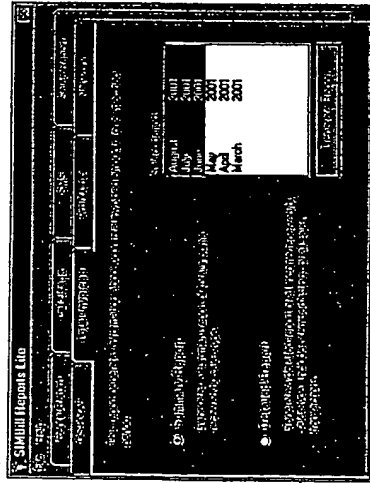
- **Summary Report** – provides a basic breakdown of income into revenue and tax charged.
- **Detailed Report** – provides the same details as the summary, along with a breakdown listing of each individual income transaction for the period.



# Total Invoiced Report

Generates a report of total income divided into individual categories, as well as tax charged for a specified period. This report determines your actual sources of income, reporting both rental and call charges.

- **Summary Report** - provides a basic breakdown of income into call charges, rental charges and tax charged.
- **Detailed Report** - provides the same details as the summary, along with a breakdown listing of each individual income transaction for the period.

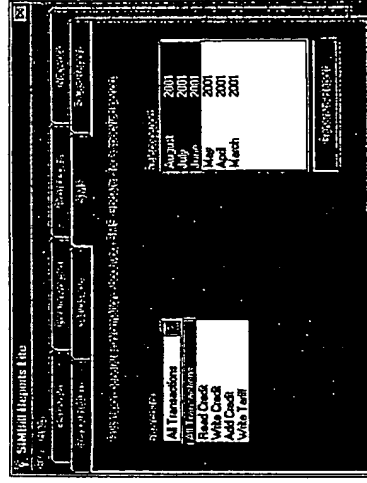


# SMS Report

Generates a report of all over-the-air SMS Updates sent in a specified period. These updates allow various changes to be made to the SIM card mid-reboot, and therefore may affect the final credit limit.

There are several options for transactions searching. These are:

- **All Transactions** - report all SMS transactions
- **Read Credit** - report all messages that queried a SIM's credit limit
- **Write Credit** - report all messages that wrote a new credit limit to a SIM
- **Add Credit** - report all messages that added credit to a SIM
- **Write Tariff** - report all messages that wrote a tariff update to a SIM



# Rental/Return Report

This report allows you to retrieve details about specific rentals or returns for a certain period.

There are two main search options for this report, being:

- **Rentals** - generates a Rental Report. Details include individual rental data, credit limits and daily rental tariff
- **Returns** - generates a Return Report. Details include individual rental and return data, total rental charges, total call charges, total GST/VAT charged (if applicable)

The report may be generated from the following fields:

- All Accounts - report all transactions
- MSISDN - report transactions with selected MSISDN(s)
- ICCID - report transactions with selected ICCID(s)
- Agent - report transactions by selected Agent(s)

The screenshot shows the 'SIMSprint Reports: Line' interface. It includes fields for 'Agent', 'MSISDN', and 'ICCID'. There are buttons for 'Search', 'Print', and 'Export'. A 'Monthly Range' dropdown is set to 'August 2001'. Below this, there are checkboxes for 'Rentals' and 'Returns', with 'Rentals' selected. The interface also displays 'Page 1 of 1' and '13/05/2001'.

Invoice Re-Printing

Invoices may be re-printed for accounts that have a matching Return Log, and is therefore not possible for Rental Log.

Individual or group invoices can be re-printed by highlighting the required accounts and clicking Generate Invoice. This feature allows a group of invoices for a specified period to be sent to larger account holders for their own internal bookkeeping.

The screenshot shows the 'SIMSprint Reports: Line' interface with a list of transactions. The table has columns for 'Date', 'Time', 'Agent', 'MSISDN', 'ICCID', 'Type', 'Status', 'Amount', and 'Balance'. The data is filtered for 'August 2001'.

Date	Time	Agent	MSISDN	ICCID	Type	Status	Amount	Balance
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	10.00
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	20.00
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	30.00
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	40.00
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	50.00
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	60.00
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	70.00
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	80.00
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	90.00
01/08/2001	10:00:00	0000000000	0000000000	0000000000	RENTAL	OK	10.00	100.00

# Sales Report

Generates a report about total income received at time of return. Details of cash and credit card payments are available, broken down into individual locations and agents for auditing purposes.

Location - generate report for selected Location(s)

Agent - use Agent(s) at selected Location(s)

# Network Calls Report

Generates a report of total network charges for a range of MSISDNs over a specified period, as well as the numbers dialed, call durations and network references.

This is where the total cost of calls charged to you by your network can be ascertained.



This is the Import Calls button

Firstly a Network Call Log file must be specified. Click on the Import Calls Button, and select a source file. Network logs may be stored in any order or location, however they need to be imported before any Network reports are generated.

When generating the Network Calls Report, the following must be specified:

- MSISDN - select a single number or an entire range from which to extract costing information and call details

All Network Call Logs must be in the following comma-delimited format:

MSISDN  
Number Dialed  
Date (YYYY-MM-DD or YYYY/MM/DD)  
Time (hh:mm)  
Duration (seconds)  
Cost (i.e. 2.45, NOT \$2.45)  
Reference

Please note that the format of your Network file must be the same as this one:

6421378575,0011642170070,2001-04-20,22:22:19,173.0,2.35,530011100423118  
6421378575,0011642170070,2001-03-15,20:26:09,61.0,0.89,530011100423118  
6421378575,0011642170070,2001-03-24,21:26:09,128.0,5.64,530011100423118

There may or may not be a plus (+) in front of the MSISDN.

i.e. +6421378575 or 6421378575 are both acceptable.

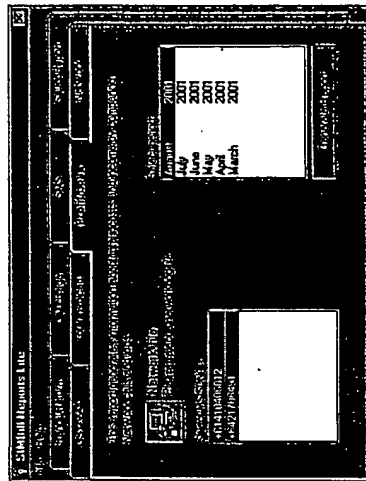
# Profit/Loss Report

Generates a report of total costs and income for a selected range of MSISDNs by comparing Network call charges to Return Logs.

Select the Network Log file to use by clicking the Import button and selecting the appropriate file. (See Network Calls Report for more information on Network Call Logs and their format.)

This report allows you to search by:

MSISDN - select a single number or an entire range from which to extract costing information, income levels and total profit.





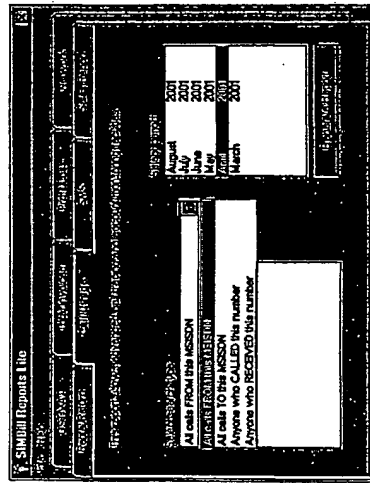
# Call Usage Report

This comprehensive report provides advanced call tracing facilities for accounting and security purposes.

The reports are generated using the call data generated at time of return from each account in SIMBILI.

There are four available searches:

- All calls TO this MSISDN - this report shows all calls made to this MSISDN from all other accounts
- All calls FROM this MSISDN - this report shows all calls made from this account
- Anyone who CALLED this number - this report shows all accounts that dialled this number
- Anyone who RECEIVED this number - this report shows all accounts that received any calls from this number



# SMS

## Updating files by SMS over the air

You can update sim cards over the air by SMS with the SIMBILI program.  
To do this you must have SMS on your user level SIMBILI messenger and a wap modem or Nokia data suite card phone installed.

All over the air updates require an SMS to be sent. For more information on sending SMS's please see section "SMS Messenger".

Click on the SMS menu option in the SIMBILI window. A list of two options will pop down.

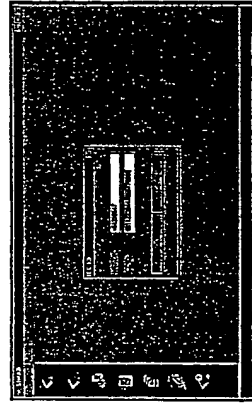
ADD CREDIT this allows you to append credit to the existing credit available.

WRITE CREDIT this will overwrite the credit balance to this amount instantly.  
You could also use this to overwrite the credit to 0.00,  
barring any outgoing calls

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First try "ADD CREDIT"

Click SMS and select ADD Credit the following screen will appear

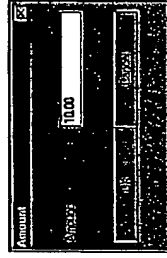


Enter the mobile number you are updating in the international format + Country code followed by number e.g. 0414141414 would be entered as +61414141414 in Australia.

You will also be asked for the ICCID number of the sim (we work on sim numbers). If you do not know the ICCID number just look at any log file of that mobile number.

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Enter (or paste) the ICCID number and click on "OK"



You will then be asked for an amount. Enter the amount you wish to add, and click on "OK". A Message has been created that will automatically be transmitted with out any further action on your part, and a log file created, provided you have licensed SIMBILI messenger and have connected a cellular modem or phone to your computer see section SIMBILI Messenger.

If you have not received SIMBILI Messenger and attached a cellular phone or Wap modem to your computer the message will not automatically be sent. If the message is sent more than once it will only be credited once, if the message is sent to the incorrect sim or phone it will not be credited.

If we click on WRITE CREDIT it is the same as ADD CREDIT except the amount requested will be credited as the new credit balance and not added to the existing balance. With this you can restore credit from the phone by sending an amount of 1.00.

## Sending SMS's

## Updating Sim card over the air

SMBILL Messenger is only method of sending SMS's to update credit balances. If you are going to be using this feature, we suggest purchasing SMBILL Messenger. Once installed all SMS messages will be automatically sent with no action on your part, just create the SMS as described in 5 above, the rest is automated.

## SMS Messenger

## Installing SMS Messenger

SMS Messenger is automatically installed when you install SIMBili to activate it all you need to do is specify license SMS Messenger on your registration form.

**You will need a Wasp cellular modem Available from you SIM-Cell dealer.**

When you receive the registration file that is copied onto your computer this will activate SIMBill Messenger on your system with no additional installation.

included with SIMBili messenger is SMS Buddy. This enables you to send any SMS to any mobile phone from your computer. You do not need an Internet connection for this.

# Network Codes

## Network & Country codes

**Note:** Exit codes are the prefixes you will dial from a country to make an international call e.g. Australia 0011 South Africa 09.

[illegible]



Malagasy	646 03	Int + 261 222 6035
Mali	646 01	
Mauritania	646 02	
Mexico	646 03	
Moldova	646 04	
Monaco	646 05	
Morocco	646 06	
Mozambique	646 07	
Myanmar	646 08	
Nicaragua	646 09	
Niger	646 10	
Nigeria	646 11	
North Macedonia	646 12	
Poland	646 13	
Portugal	646 14	
Romania	646 15	
Russia	646 16	
Saudi Arabia	646 17	
Senegal	646 18	
Serbia	646 19	
Slovakia	646 20	
Slovenia	646 21	
Spain	646 22	
Sweden	646 23	
Switzerland	646 24	
Taiwan	646 25	
Tanzania	646 26	
Thailand	646 27	
Togo	646 28	
Tunisia	646 29	
Turkey	646 30	
Ukraine	646 31	
United Kingdom	646 32	
United States	646 33	
Yugoslavia	646 34	

[illegible]



## Glossary of Terms

<b>WAN</b>	Wide area network
<b>LAN</b>	Local area network
<b>CD</b>	Compact Disk
<b>MSISDN</b>	Mobile Station Integrated Services Digital Network
<b>ICCID</b>	Integrated Circuit Card ID
<b>+</b>	Symbol for international call, country code or call code
<b>MT</b>	Mobile Terminating
<b>MO</b>	Mobile Originating
<b>MNC</b>	Mobile Network Code
<b>MCC</b>	Mobile Country Code

<b>VAT</b>	Value Added Tax
<b>GST</b>	Goods and Services Tax
<b>SMS</b>	Short Message Service
<b>Sim</b>	Subscriber Identity Module
<b>PC</b>	Personal Computer

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A	ADD CREDIT 19, 42, 51-53, 51-53 Additional Sim Card Readers 16
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Simbill Simbill

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CLAIMS:

1. A method of billing the usage of mobile telephones comprising the steps of:
  - (a) entering a user program onto a SIM card,
  - (b) supplying a hirer with the programmed SIM card and software required for rendering accounts and controlling the use of the mobile telephones upon the termination of a hire period.
2. A method as claimed in claim 1 wherein the software enables the hirer or to set tariffs and credit limits, independently of network suppliers.
3. A method as claimed in claim 1 the user program and software enables the hirer to add or deduct credit over the air using SMS systems.
4. A method as claimed in claim 1 wherein the user program provides the hirer with the ability to:
  - (a) create and alter credit limits,
  - (b) store customer information,
  - (c) set tariffs for calls,
  - (d) block disallowed calls.
5. A method as claimed in claim 4 wherein the user program provides the hirer with the ability to allow free calls at its discretion.
6. A SIM card resident cellular phone billing system for performing the method of any one claims 1 to 5 the system comprising:
  - (a) a host processor unit having a P.C. application, and
  - (b) a SIM card reading apparatus adapted to access and applet associated with the SIM card, characterised in that the host processor at point of issue is programmable using the P.C. application to control the use of a cellular phone and on return of the cellular phone to its point of issue, and re entry of the SIM card to the SIM card reader, to read the SIM card and generate information as to its usage.
7. A billing system as claimed in claim 6 wherein the program of the host processor can transfer information on call costs to the SIM card.
8. A billing system as claimed in claim 6 or 7 wherein the program of the host processor can transfer information relating to the telephone user to the



SIM card.

9. A billing system as claimed in claim 6 wherein the program of the host processor can read information stored on the SIM card relating to calls made, numbers dialed and tariffs associated with the calls.

10. A billing system as claimed in any one of claims 6 to 9 including a cellular phone modem which enables over the air programming and adding or amending credit balances of a SIM card.

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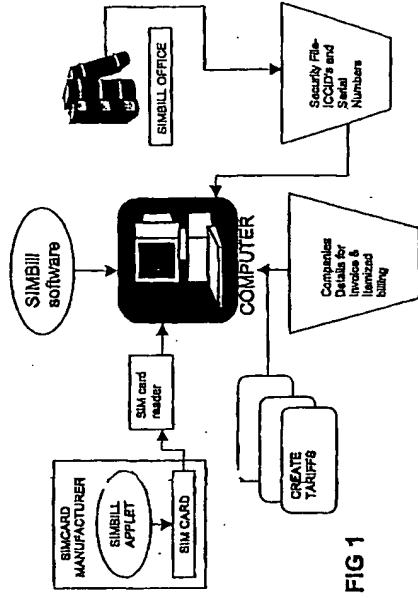


FIG 1

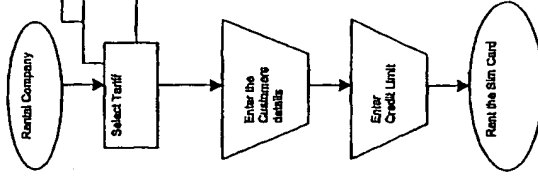
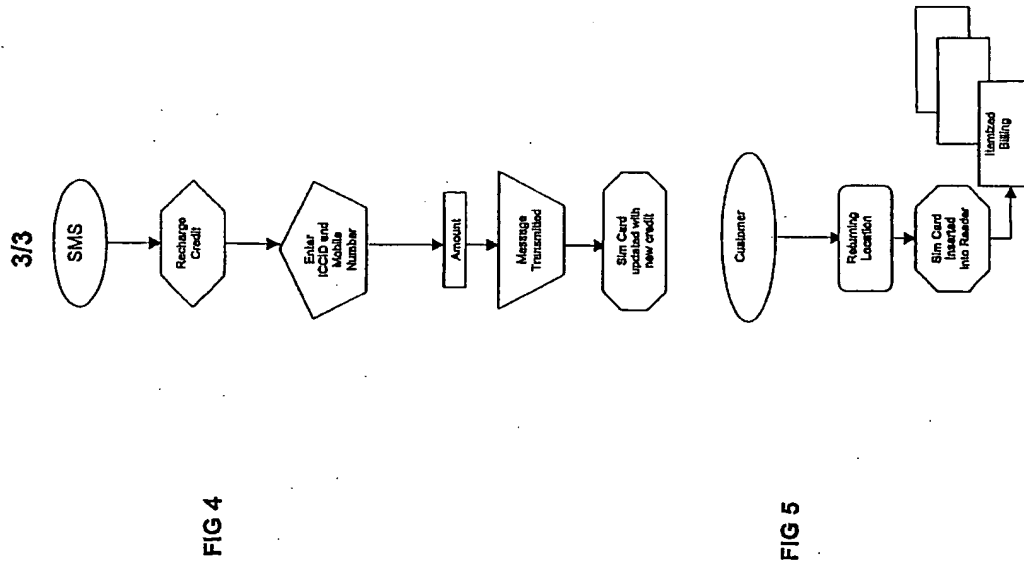
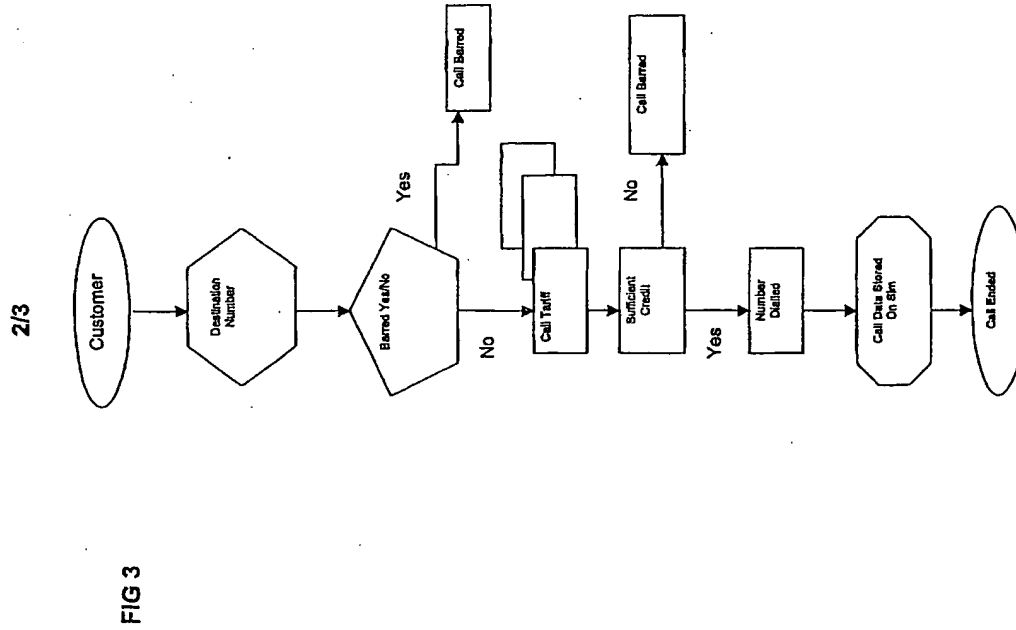


FIG 2



INTERNATIONAL SEARCH REPORT		International application No. PCT/AU01/01423
A. CLASSIFICATION OF SUBJECT MATTER		
Int. Cl. <sup>7</sup> : H04M 15/00, H04M 17/00, H04Q 7/32		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols)		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)		
WPAT: KEYWORDS- PHONE, RENT, HIRE, BILL, ACCOUNT, CHARGE, SIM, MOBILE AND SIMILAR		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Derwent Abstract Accession No. 2000-443961/39, Class T04, DE 200 04 892 U1 (SAUER) 31 MAY 2000 & US 2001/0023180 A1 20 SEPTEMBER 2001 Whole document	1 - 10
X	WO 99/41919 A2 (SWISSCOM AG et al) 19 AUGUST 1999 Whole document	1 - 10
X	Derwent Abstract Accession No. 98-273672/25, Class W01, DE 298 00 711 U1 (SWISSCOM AG) 14 MAY 1998 & US 6223026 B1 (MARTSCHITSCH) 24 APRIL 2001 Whole document	1 - 10
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other information "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to underpin the principles of theory underlying the invention "X" document of particular relevance the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "Z" document member of the same patent family		
Date of the actual completion of the international search 21 December 2001		Date of mailing of the international search report 7 FEB 2002
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WOODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustralia.gov.au Facsimile No. (02) 6245 3929		Authorized officer R.W.J. FINZI Telephone No.: (02) 6283 2213

INTERNATIONAL SEARCH REPORT		International application No. PCT/AU01/01423
C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96/24229 A1 (McGREGOR et al) 8 AUGUST 1996 Whole document	1, 2, 4 - 6, 8 - 10 3, 7
Y	With AU-A-80834/98	
X	US 5325418 A (McGREGOR et al) 28 JUNE 1994 Whole document	1, 2, 4 - 6, 8 - 10 3, 7
Y	With AU-A-80834/98	
Y	AU-A-80834/98 (ALCATEL ALSTHOM COMPAGNIE GENERALE DELCTRICITE) 4 MARCH 1997 Whole document	3, 7

INTERNATIONAL SEARCH REPORT	
Information on patent family members	International application No.
PCT/AU01/01423	
This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.	

Patent Document Cited in Search Report	Patent Family Member	
DE 20004892	FR 2806569	US 2001023180
WO 9941919	AU 22620/99	EP 1057350
DE 29800711	JP 11196198	US 6223026
WO 9624229	AU 49010/96	BR 9606875
	CN 1176039	EP 808547
	US 5577100	US 6198915
	US 5325418	US 5625669
	US 5625669	US 6243574
	WO 9600481	AU 29478/95
AU 8083498	AU 80834/98	CA 2243617
	FR 2767626	JP 11136752
		US 6278885
END OF ANNEX		